REMARKS

The application has been amended and is believed to be in condition for allowance.

Claims 1-11 were rejected as obvious over YAMADA 5,986,377 in view of NEAL 6,892,439.

Independent claims 1 and 8 have been amended to recite the invention more specifically, i.e., winding a toroidally wound electrodynamic machine with a set of bobbins are located in a rectilinear axially aligned array of adjacent bobbins (claim 1), and a toroidally wound electrodynamic machine comprising a set of wound bobbins initially wound as a rectilinear axially aligned array of adjacent bobbins (claim 8).

See the drawing figures as well as published application paragraph [0031] disclosing that that at least the preferred form of the invention provides a toroidally wound electrodynamic machine combining the advantages of being able to wind the toroidal electrical coils while arranged in a straight line, without the added complexity of having to electrically join the coils during machine construction.

In the present invention, the wound bobbins are formed into a circular array suitable for an electrodynamic machine winding of a toroidally wound electrodynamic machine so that a resulting flux associated with each bobbin is circumferential and axially aligned with an adjacent bobbin to define an overall torus-shaped resulting flux.

New method claims are added based on method claims 1-7.

Reference is made to published application beginning with paragraph [0021] and Figure 1, disclosing manufacturing a coil for a toroidally wound machine as a series of bobbins which comprise two phase windings, the coils being mounted on a rectangular former for winding.

See paragraph [0025] and Figure 3, illustrating the bobbins having an external shelf 15, one edge of which forms the pivot axis between bobbins. The wire being routed between bobbins lay on this shelf for support. The shelf, in combination with the tapered edges 16 on one side of the bobbin, assists in providing a stable coil configuration and a good packing factor when the bobbins are placed in a curved path on the toroid in the machine. As per paragraph [0030], once the bobbins have been wound they may be removed from the winding machine and bent into a toroid, the inner cheeks of the bobbins being tapered as shown at 16 to allow this. Although the outer edges of the bobbins will separate to some extent the shelf 15 is proportioned to maintain correct positioning and tension of the wire passing between bobbins. See new claim 19.

As per paragraph [0028], the bobbins may have extensions at the inner edge of the through hole to project into corresponding cavities in the next bobbin and locate the two together.

Neither of the applied references relate to a toroidally wound electrodynamic machine. Rather, each of the applied references relate to, and disclose, sailient pole machines. Although the Official Action offers these references as disclosing bobbins formed in a circular array, neither reference teaches either 1) locating a set of bobbins in a rectilinear axially aligned array of adjacent bobbins; and then winding the rectilinearly located bobbins with one of i) a continuous wire and ii) a continuous set of parallel wires for each phase; or 2) bobbins initially wound as a rectilinear axially aligned array of adjacent bobbins and formed into a circular array.

With respect to the new claims, neither reference discloses 1) locating a set of bobbins in a rectilinear axially aligned array of adjacent bobbins; 2) winding the rectilinearly located bobbins with one of i) a continuous wire and ii) a continuous set of parallel wires for each phase; and3) forming the wound bobbins into a circular array suitable for an electrodynamic machine winding of a toroidally wound electrodynamic machine.

New claims 19 and 20 include features of the invention also not identified in the applied art, e.g., that the bobbins have an external shelf, one edge of each external shelf forming a pivot axis between the bobbins, the wire is routed between bobbins and are supported by the external shelf, and the bobbins

each have tapered edges on one side for defining a curved path when forming the wound bobbins into the circular array. See Also, that the bobbins each have a cavity and an extension such that the extension of one bobbin fits into the cavity of an adjacent bobbin. The prior art would not have these features as the prior art is directed to salient pole machines.

As noted above, both YAMADA and NEAL relate to salient pole machines. In salient pole machines the windings are circularly arranged by being placed in slots (YAMADA) or on poles or pegs 21 (NEAL) so that the axis of the individual windings end up in a radial configuration and the resulting flux from each winding is radial.

In contrast, the presently claimed invention forms the wound bobbins into a circular array suitable for an electrodynamic machine winding of a toroidally wound electrodynamic machine so that a resulting flux associated with each bobbin is circumferential and axially aligned with an adjacent bobbin to define an overall torus-shaped resulting flux.

Both the final structure and the method of manufacture are different.

See in YAMADA a combination of inflexible salient poles conjoined by a slim deformable jointure and relying on the abutment of the separate salient poles to create a flux path. The already wound windings are placed upon the salient poles of an assembled pole set, as shown in Figures 24 through 27.

This is not the method recited and does not create the rectilinear (straight line) bobbin array as recited, but rather is a linear array of poles normal to the direction of the potential back iron, each pole carrying a bobbin.

In NEAL (Figure 2), there is disclosed continuous wiring for windings of a salient pole machine to deform a linear wound core into an annular shape. However, note that the bobbins are not located as a set of bobbins in a rectilinear axially aligned array of adjacent bobbins. Nor does the deformation into the annular shape result in a circular array suitable for an electrodynamic machine winding of a toroidally wound electrodynamic machine so that a resulting flux associated with each bobbin is circumferential and axially aligned with an adjacent bobbin to define an overall torus-shaped resulting flux.

The recited features of the claims being neither anticipated nor rendered obvious, each of the claims is believed patentable.

Withdrawal of the rejection and allowance of the claims are therefore respectfully requested.

Should there be any matters that need to be resolved in the present application; the Examiner is respectfully requested to contact the undersigned at the telephone number listed below.

The Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any

overpayment to Deposit Account No. 25-0120 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17.

Respectfully submitted,

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